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### Zika 2016: A 3-Phase Longitudinal Study of the Media Impact on Public Attitudes and Behavioral Response Characteristics

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# 2016 Zika Virus outbreak and the Extended Parallel Processing Model

Karly Kownslar

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# Question

- How do people process risk messages during disease outbreaks?
- What can we learn from surveying people in real-time during the 2016 outbreak?
- What does theory tell us?

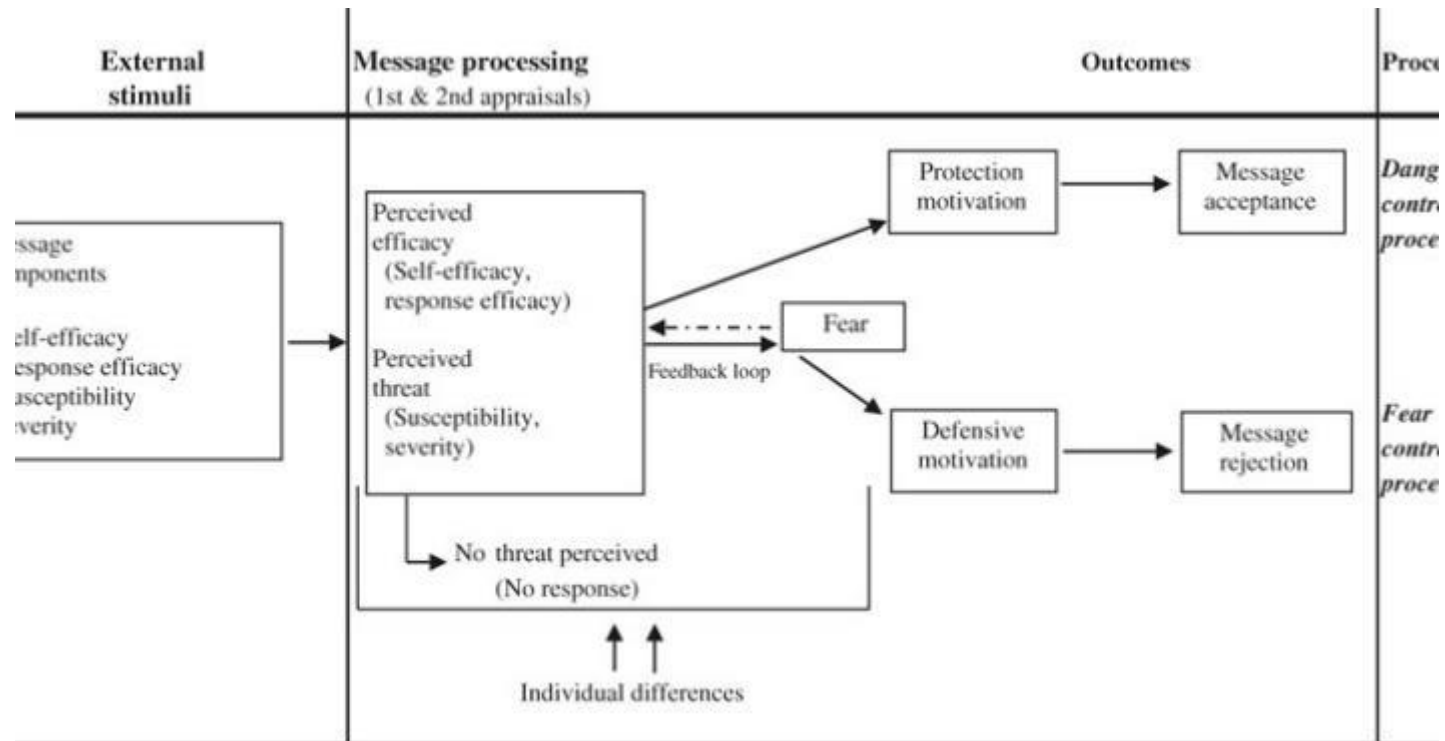
# Zika

- Spread by mosquitos and human-to-human through bodily fluids
- Majority of cases lead to flu-like symptoms and rash
- In 2016, officials connected Zika infection to more serious disorders:
  - Microcephaly in fetuses and newborns
  - Guillain-Barre syndrome – temporary paralysis

# Literature Review

- Media inflates negative health outcomes (Goodall et al., 2012)
- News reports use panic-inducing words that indicated themes of threat, susceptibility, fear, and uncertainty (Adeyanju & Neverson, 2005)
- When health agencies make mistakes during epidemics it impacts their credibility (Rosenbaum, 2015)
- People typically think *others* are more susceptible to negative messages or media contact, called the third person effect (Wei, Lo & Hu, 2008).
- All these things can impact how the public deal with health threats

# Extended Parallel Processing Model (EPPM)



# Research Questions

- RQ1. How does consumption of media content about Zika impact perceptions of severity?
- RQ2. How does consumption of media content about Zika impact perceptions of susceptibility?
- RQ3. Did consumption of Zika-related media impact participants' perceived self-efficacy over time?
- RQ4. Did consumption Zika-related media content impact participants' perceived response efficacy over time?
- RQ5. Does consumption of Zika-related media affect third person perception?

# Hypothesis

- Consumption of messages from health agencies will lead to higher intent to adopt the preventative behaviors compared to consumption of Zika-related media from the other channels.

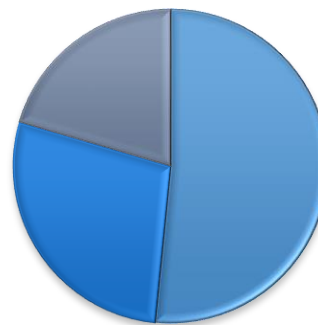


# Method

- Quantitative study
- Participants answered surveys on the variables of the EPPM and media consumption
- Participants were recruited through Amazon Turk and Turk Prime to ensure anonymity and a large sample
  - 826 responses over three Time-Phases
    - April, September, and November 2016
    - 794 responses were analyzed
- Study approved by IRB

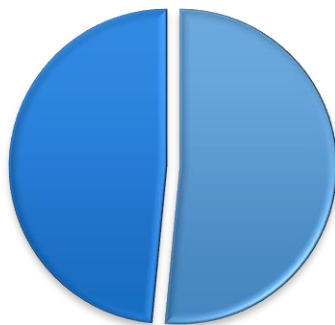
# Participants

## Participants



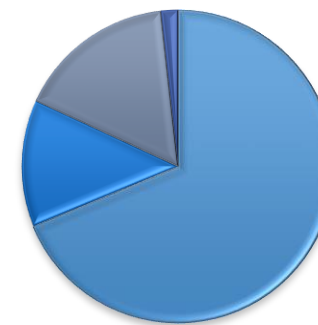
- TP 1  
n=426
- TP 2  
n=231
- TP 3  
n=169

## Sex



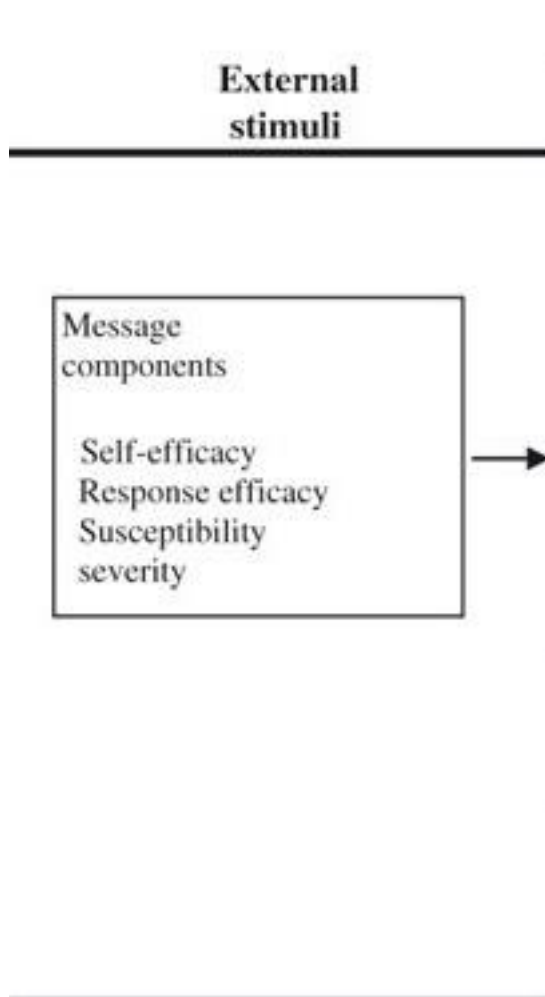
- Female  
51%
- Male  
48%

## Age



- 18-34
- 35-39
- 45-64
- 65+

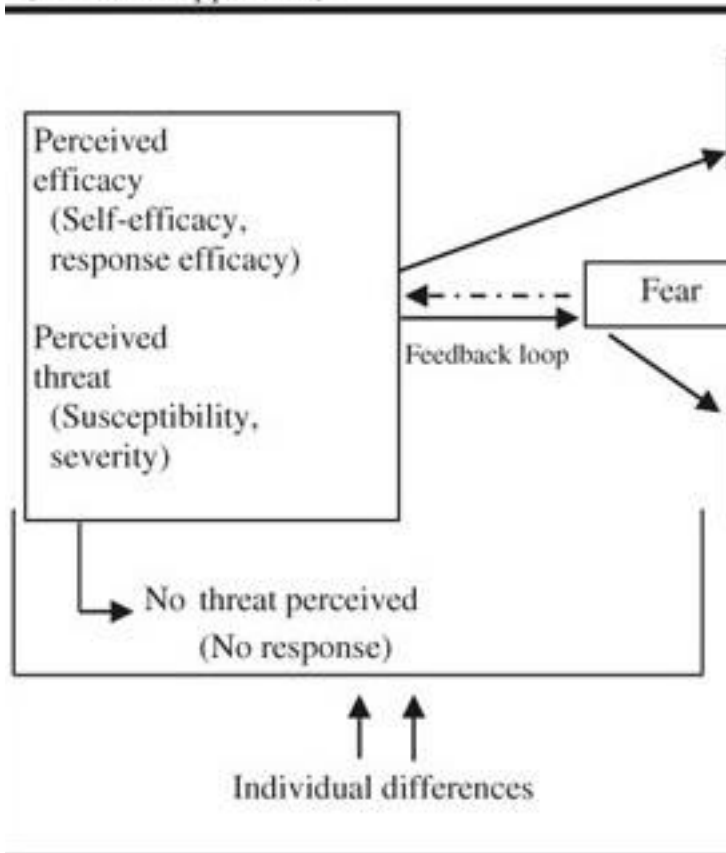
# Messages



- Consumption of Zika-related media
  - How many times did they hear about the global and U.S. Zika outbreak
  - From which sources did they hear about Zika:
    - Friends/Family
    - Traditional Media (TV, radio, newspaper)
    - Social media
    - Government agencies
    - Healthcare workers

# Message Processing

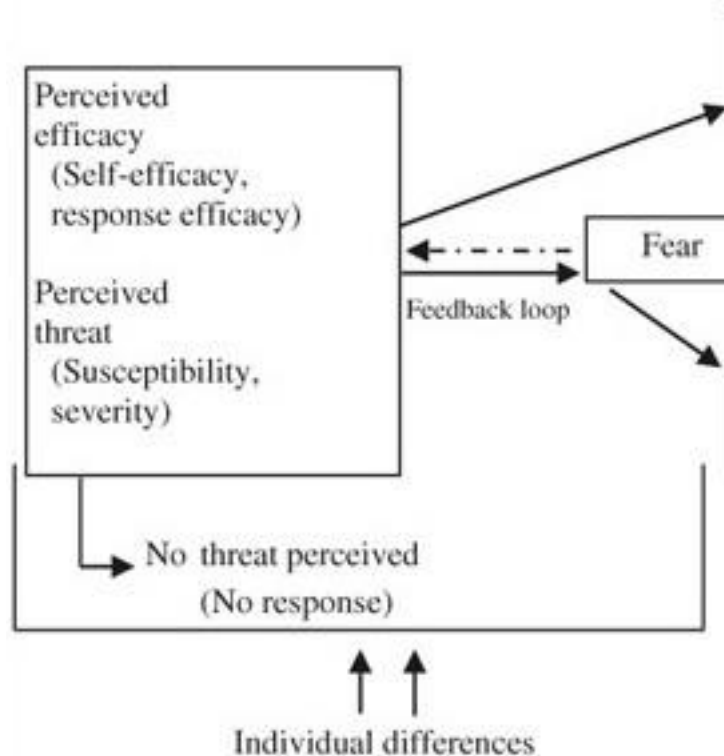
## Message processing (1st & 2nd appraisals)



- Asked to report their perceptions on perceived threat on a 5-point Likert scale:
  - Severity
  - Susceptibility

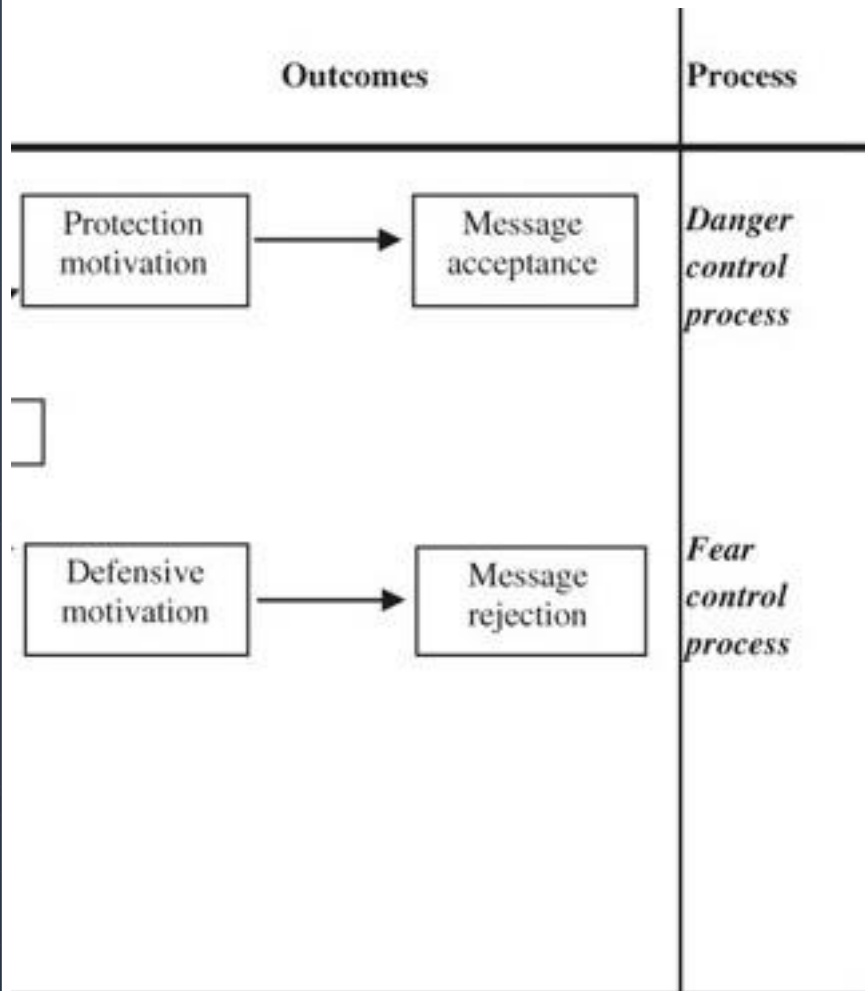
# Message Processing

## Message processing (1st & 2nd appraisals)



- Efficacy (5-point Likert scale)
  - Self
  - Response
  - Third person effects – added to original model
    - Others' self-efficacy
    - Others' response-efficacy

# Outcomes



- Behavioral intentions
- Avoid Acquisition
  - Avoid traveling to impacted areas
  - Use mosquito nets, repellent
- Avoid transmission
  - Get screening
  - Family planning
  - Consider or obtain an abortion
- Share information
- Seek information

# Results & Discussion

- RQ1. How does consumption of media content about Zika impact perceptions of severity?
- Participants who heard about Zika more than 10 times had higher perceived severity than participants who had heard of Zika only once

**Table 1.** Media consumption of U.S. Zika Outbreak and Perceived Severity and Susceptibility

|                         | <b>Severity</b>        | <b>Susceptibility</b>  |
|-------------------------|------------------------|------------------------|
|                         | <u>M(SD)</u>           | <u>M(SD)</u>           |
| <i>Not at all</i>       | 3.88(.09)              | 2.35(.12) <sup>a</sup> |
| <i>Once</i>             | 3.87(.08) <sup>a</sup> | 2.53(.10)              |
| <i>2-4 Times</i>        | 3.94(.05)              | 2.73(.07) <sup>b</sup> |
| <i>5-10 times</i>       | 4.03(.06)              | 2.85(.08) <sup>a</sup> |
| <i>10 or more times</i> | 4.08(.06)              | 3.04(.08) <sup>a</sup> |
| <i>Don't know</i>       | 4.60(.33)              | 3.53(.43)              |

Note: <sup>a</sup>significant at .01 level; <sup>b</sup>significant at .05 level

# Results & Discussion

- RQ2. How does consumption of media content about Zika impact perceptions of susceptibility
- Participants who heard about the U.S. Zika outbreak multiple times had higher perceived susceptibility than those who had heard about Zika only once

**Table 1.** Media consumption of U.S. Zika Outbreak and Perceived Severity and Susceptibility

|                         | <b>Severity</b>        | <b>Susceptibility</b>  |
|-------------------------|------------------------|------------------------|
|                         | <u><i>M(SD)</i></u>    | <u><i>M(SD)</i></u>    |
| <i>Not at all</i>       | 3.88(.09)              | 2.35(.12) <sup>a</sup> |
| <i>Once</i>             | 3.87(.08) <sup>a</sup> | 2.53(.10)              |
| <i>2-4 Times</i>        | 3.94(.05)              | 2.73(.07) <sup>b</sup> |
| <i>5-10 times</i>       | 4.03(.06)              | 2.85(.08) <sup>a</sup> |
| <i>10 or more times</i> | 4.08(.06)              | 3.04(.08) <sup>a</sup> |
| <i>Don't know</i>       | 4.60(.33)              | 3.53(.43)              |

Note: <sup>a</sup>significant at .01 level; <sup>b</sup>significant at .05 level



# Results & Discussion

- RQ3. Did consumption of Zika-related media impact participants' perceived self-efficacy over time?
- RQ4. Did consumption Zika-related media content impact participants' perceived response efficacy over time?
- Participants' self-efficacy and response-efficacy increased over the times surveyed

**Table 2.** Severity, Susceptibility, Self-Efficacy, and Response-Efficacy over time

|                   | T1<br><i>M(SD)</i>     | T2<br><i>M(SD)</i> | T3<br><i>M(SD)</i> |
|-------------------|------------------------|--------------------|--------------------|
| Severity          | 3.98(.74)              | 3.99(.75)          | 3.99(.76)          |
| Susceptibility    | 2.81(.95) <sup>a</sup> | 2.87(.95)          | 2.64(1.03)         |
| Self-Efficacy     | 2.82(.86) <sup>b</sup> | 3.20(.77)          | 3.34(.73)          |
| Response-Efficacy | 3.18(.84) <sup>c</sup> | 3.41(.83)          | 3.53(.77)          |

Note: 1-5 Likert ranging strongly agree to strongly disagree, higher numbers indicate more positive reactions. <sup>a</sup> $p=.06$ , <sup>b</sup> $p<.05$ , <sup>c</sup> $p<.001$ .

# Results & Discussion

- *H1. Consumption of messages from health agencies will lead to higher intent to adopt the preventative behaviors compared to consumption of Zika-related media from the other channels.*
- Participants who heard about Zika from government agencies did have significant more intentions to share Zika related information online, perhaps because government agencies have more credibility than the other sources

# Implications

- As participants heard more information about the U.S. Zika outbreak, results indicate message acceptance and danger-control processes in the form of intention to do the behaviors listed

# Implications

- Those who reported interpersonal communication about Zika felt others would be more effective dealing with the threat

# Implications

- While perceived severity of Zika remained high, participants who reported hearing about Zika from any source had higher perceptions of self-efficacy and response-efficacy for themselves and others (TPP)

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